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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/092,103

03/06/2002

Youngseok Lee

5895P003

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06/26/2006

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EXAMINER

HAMANN, JORDAN J

ART UNIT

PAPER NUMBER

2616

DATE MAILED: 06/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

81

**Supplemental  
Notice of Allowability**

Application No.

10/092,103

Examiner

Jordan Hamann

Applicant(s)

LEE ET AL.

Art Unit

2616

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to \_\_\_\_\_.
2. ☒ The allowed claim(s) is/are 1-4, and 7-16.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All b) ☐ Some\* c) ☐ None of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |  |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment                    |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance              |
|   | 9. <input type="checkbox"/> Other _____.   |

### EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Eric Hyman on 24 May 2006 and 26 May 2006.

The application has been amended as follows:

Claim 1. (Currently Amended) A constrained multipath routing method in a Multi-Protocol Label Switching (MPLS) network, comprising the steps of;

- a) setting MPLS network conditions and traffic requirements assigned to each link;
- b) calculating the amount of assignments of each traffic requirement assigned to each link and a minimum value of each maximum link utilization  $\alpha$   $\alpha$ ;
- c) calculating a traffic rate ( $X_{ij}^{ki}$ ) in which the degree of network resource utilization is minimized in the minimized maximum link utilization  $\alpha$   $\alpha$  using the calculated amount of assignments of each traffic requirement and which is assigned to each link; and
- d) calculating multiple paths corresponding to the input traffic requirements and traffic division ratios of the multiple paths using the calculated traffic rate and a traffic

corresponding to the traffic rate of each path satisfies a restrictive condition of maximum allowable hop count; and

e) setting a multipath which satisfies the restrictive condition of maximum allowable hop count.

Claim 10. (Currently Amended) A computer-readable record medium for recording a program in a Multi-Protocol Label Switching (MPLS) network, the program executing the functions of;

a) setting MPLS network conditions and traffic engineering requirements assigned to each link;

b) calculating the amount of assignments of each traffic requirement assigned to each link and a minimum value of each maximum link utilization;

c) calculating a traffic rate in which resource utilization is minimized in the minimized maximum link utilization using the calculated amount of assignments of each traffic requirement and which is assigned to each link; and

d) calculating multiple paths corresponding to the input traffic requirements and traffic division ratios of the multiple paths using the calculated traffic rate and a traffic corresponding to the traffic rate of each path is calculated by applying a discrete traffic division ~~ratio~~ ratio; and

e) setting a multipath which satisfies the discrete traffic division ratio.

Claim 11. (Currently Amended) A constrained multipath routing method in a Multi-Protocol Label Switching (MPLS) network, comprising the steps of;


- a) setting MPLS network conditions and traffic requirements assigned to each link;
- b) calculating the amount of assignments of each traffic requirement assigned to each link and a minimum value of each maximum link utilization  $\alpha$   $\alpha$ ;
- c) calculating a traffic rate ( $X_{ij}^{ki}$ ) in which the degree of network resource utilization is minimized in the minimized maximum link utilization  $\alpha$   $\alpha$  using the calculated amount of assignments of each traffic requirement and which is assigned to each link; ~~and~~
- d) calculating multiple paths corresponding to the input traffic requirements and traffic division ratios of the multiple paths using the calculated traffic rate and a traffic corresponding to the traffic rate of each path is calculated by applying a discrete traffic division ratio; and
- e) setting a multipath which satisfies the discrete traffic division ratio.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jordan Hamann whose telephone number is (571) 272-8564. The examiner can normally be reached on Monday-Thursday 8:30-5:30 and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on (571) 272-3126. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JJH



CHI PHAM  
SUPERVISORY PATENT EXAMINER